CARCHARIAS RAFINESQUE, 1810 (CHONDRICHTHYES, LAMNIFORMES): PROPOSED CONSERVATION BY THE USE OF THE RELATIVE PRECEDENCE PROCEDURE. Z.N.(S)2414

By Leonard J. V. Compagno (*Tiburon Center for Environmental Studies, P.O. Box 855, Tiburon, California 94920, U.S.A.*) and W. I. Follett (*California Academy of Sciences, San Francisco, California, 94118. U.S.A.*)

This application requests the International Commission on Zoological Nomenclature to use its plenary powers to conserve the generic name *Carcharias* Rafinesque, 1810, p. 10, which was suppressed by Opinion 723 in *Bull. zool. Nom.*, vol. 22, pp. 32–36. The ruling given in Opinion 47 (*Smithson. publ.*, No. 2026, pp. 108–109) had determined that *Carcharias* Rafinesque, 1810, is monotypic and that its type species is *Carcharias taurus* Rafinesque, 1810. The date of publication of the work in which Rafinesque originally diagnosed this genus and species has been shown by Holthuis & Boeseman, 1977 to be 1810, rather than 1809 as Fitzpatrick, 1911, p. 69, had concluded. The extensive usage of the binomen *Carcharias taurus* was noted by Bigelow & Schroeder, 1948, pp. 106–107.

Carcharias Rafinesque, '1809', was suppressed by Opinion 723. This suppression had been requested by White, Tucker & Marshall, 1961, p. 274, 'so as to validate *Odontaspis*'. The type species of *Odontaspis* J. L. R. Agassiz, 1838, is *Carcharias ferox* Risso, 1826, p. 122 (Opinion 723(3)(c)) — a species that we regard as taxonomically referable to a genus distinct from *Carcharias* Rafinesque, 1810.

3. In suppressing *Carcharias* in favour of *Odontaspis*, the Commission relied upon the statement of White, Tucker & Marshall, 1961, p. 274, that '... the respective nominal type-species of *Carcharias* Rafinesque, 1809, and *Odontaspis* J. R. L. Agassiz, 1838, are congeneric ...'.

4. We disagree with that statement. These two species are not congeneric — they are referable to taxonomically distinct genera. Characters that differentiate *Carcharias* from *Odontaspis* include the following:

5. Genus *Carcharias* Rafinesque, 1810: Snout moderately depressed, not bulbously conical, and short, length 1/2 to 2/3 of mouth width. Eyes smaller, 0·9 to 1·4% of total length. Upper symphyseal tooth rows usually absent; three rows of upper anterior teeth on either side of symphysis; heterodonty strong along jaws, lateral teeth compressed and bladelike, with flattened cusps, and posterior teeth strongly differentiated as carinate, molariform crushers; cusplets on anterior teeth short and strongly hooked,

and cusps stout and broad-tipped; teeth larger, second lower anterior tooth 1·3 to 1·5 times height of comparable tooth in *Odontaspis*. First dorsal, second dorsal, and anal fins approximately equal-sized; first dorsal fin positioned far posteriad on back, its midbase much closer to the pelvic fin bases than to the pectoral fin bases, and its free rear tip posterior to the pelvic fin origins. Neurocranium with short rostral cartilages, length of medial rostral cartilage only 28 to 29% of nasobasal length (distance from base of medial rostral cartilage to occipital centrum); node of rostral cartilages short and V-shaped; bases of lateral rostral cartilages anterior to the anterior fontanelle and separated from its margin; nasal capsules not extending below the basal plate, without a ventral projection on the internasal plate; basal plate broadly arched, width across it at orbital notches 43 to 44% of nasobasal length; anterior fontanelle wider than long; cranial roof broadly arched; parietal fossa narrow; preorbital processes high and angular; post-orbital processes narrowly angular; orbits low, height 42 to 43% of length; cranial height about 34% of nasobasal length.

6. Genus *Odontaspis* J. L. R. Agassiz, 1838: Snout bulbously conical, not depressed, and longer, length 3/4 or more of mouth width. Eyes larger, 1·6 to 2·3% of total length. Upper symphyseal tooth rows present; two rows of upper anterior teeth on either side of symphysis; heterodonty weaker along jaws, lateral teeth little compressed and not bladelike, with cusps little flattened, and posterior teeth not differentiated as molariform crushers; cusplets on anterior teeth long and straight or weakly curved, not hooked, and cusps slender and narrow-tipped; teeth smaller, second lower anterior tooth 0·6 to 0·8 of height of comparable tooth in *Carcharias*. First dorsal fin larger than second dorsal fin, and second dorsal somewhat larger than anal fin; first dorsal fin positioned more anteriad on back, its midbase closer to the pectoral fin bases than to the pelvic fin bases, and its free rear tip well anterior to the pelvic fin origins. Neurocranium with longer rostral cartilages, length of medial rostral cartilage 54 to 58% of nasobasal length; node of rostral cartilages elongate and Y-shaped; bases of lateral rostral cartilages confluent with the margin of the anterior fontanelle; nasal capsules extending below the basal plate, with a ventral projection on the internasal plate; basal plate flat, width across it at orbital notches 36 to 38% of nasobasal length; anterior fontanelle longer than wide; cranial roof narrowly arched; parietal fossa broad; preorbital processes low and truncate; postorbital processes broadly angular; orbits higher, height 70 to 79% of length; cranial height about 42% of nasobasal length.

7. In a forthcoming review of the sharks of this family, one of us (L.J.V.C.) desires to demonstrate the taxonomic distinction of *Carcharias* from *Odontaspis*, but he has been *forbidden* to do so by Opinion 723, which ruled in effect that these two genera are not taxonomically distinct.

8. That ruling transgressed a fundamental precept of the Code: '. . . none [of the provisions of the Code] restricts the freedom of taxonomic thought or action' (International Code of Zoological Nomenclature, Preamble).

We therefore request the International Commission on Zoological Nomenclature to use its plenary powers:

(1) to repeal the Ruling given in Opinion 723 (1) by which the Ruling given in Opinion 47 was repealed;

(2) to reinstate Opinion 47;

(3) to repeal the Ruling given in Opinion 723 (2) (a) (i) by which *Carcharias* Rafinesque, '1809', was suppressed for the purpose of the Law of Priority;

(4) to repeal the Ruling given in Opinion 723 (5) (a) by which *Carcharias* Rafinesque, '1809', was placed on the Official Index of Rejected and Invalid Generic Names in Zoology;

(5) to determine the date of original publication of the generic name *Carcharias* Rafinesque to be 1810;

(6) to determine the date of original publication of the specific name *taurus* Rafinesque as published in the binomen *Carcharias taurus* Rafinesque to be 1810;

(7) to place the generic name *Carcharias* Rafinesque, 1810 (gender: masculine), type-species by monotypy, *Carcharias taurus* Rafinesque, 1810, on the Official List of Generic Names in Zoology, with an endorsement that it is not to be given nomenclatural precedence over *Odontaspis* J. L. R. Agassiz, 1838, whenever the two names are considered as synonyms;

(8) to augment the Ruling given in Opinion 723 (3) (c) (by which *Odontaspis* J. L. R. Agassiz, 1838, was placed on the Official List of Generic Names in Zoology) by adding to that Ruling an endorsement that *Odontaspis* J. L. R. Agassiz, 1838, is to be given nomenclatural precedence over *Carcharias* Rafinesque, 1810, whenever the two names are considered as synonyms;

(9) to place the specific name *taurus* Rafinesque, 1810, as published in the binomen *Carcharias taurus* (specific name of type-species of *Carcharias* Rafinesque, 1810), on the Official List of Specific Names in Zoology.

REFERENCES

AGASSIZ, J. L. R., 1838. *Recherches sur les Poissons Fossiles*. Tome III, Neuchatel, viii + 424 pp.

BIGELOW, HENRY B. & SCHROEDER, WILLIAM C., 1948. Sharks. In: *Fishes of the Western North Atlantic*. Part One. New Haven, pp. 59–546.

FITZPATRICK, T. J., 1911. *Rafinesque. A sketch of his life with bibliography*. Des Moines, 241 pp.

HOLTHUIS, L. B., & BOESEMAN, M. 1977. Notes on C. S. Rafinesque Schmalt's (1810) *Caratteri di alcuni nuovi generi e nuove specie di animali e piante della Sicilia. J. Soc. Bibliogr. nat Hist.* vol. 8, pp. 231–234.

RAFINESQUE SCHMALTZ, C. S., 1810. *Caratteri di alcuni nuovi generi e nuove specie di Animali e Piante della Sicilia con varie osservazioni sopra i medesimi*. Palermo, 105 pp.

RISSO, ANTOINE, 1826. *Histoire naturelle des principales Productions de l'Europe Méridionale et particulièrement de celles des environs de Nice et des Alpes Maritimes*. Vol. 3, Paris, pp. 97–480.

WHITE, E. I., TUCKER, D. W. & MARSHALL, N. B., 1961. Proposal to repeal the ruling given in Opinion 47 and to use the plenary powers to stabilise the generic names *Carcharhinus* Blainville. 1816, *Carcharodon* A. Smith, 1838, and *Odontaspis* J. L. R. Agassiz, 1838, in their accustomed senses (Class Pisces). Z.N. (S.) 920. *Bull. zool. Nom.* vol. 18, pp. 273–280.